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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,523	08/26/2003	Dong-Hoon Kim	21C-0065	4676

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CANTOR COLBURN LLP
55 Griffin Road South
Bloomfield, CT 06002

EXAMINER

NEGRON, ISMAEL

ART UNIT PAPER NUMBER

2875

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/648,523

Applicant(s)

KIM ET AL.

Examiner

Ismael Negron

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-6 and 9-72 is/are pending in the application.
- 4a) Of the above claim(s) 22-57 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,4-6 and 9-21 is/are allowed.
- 6) ☒ Claim(s) 53,58 and 67-72 is/are rejected.
- 7) ☒ Claim(s) 64-66 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Response to Amendment

2. Applicant's amendment filed on January 10, 2006 has been entered. Claims 1, 4, 9-12, 16-20 and 58 have been amended. Claims 3, 7 and 8 have been cancelled. Claims 63-72 have been added. Claims 1, 4-6, 9-21 and 58-72 are still pending in this application, with claims 1, 58 and 63 being independent.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claim 63 is rejected under 35 U.S.C. 102(a) as being anticipated by RYU et al. (U.S. Pat. Pub. No. 2002/0181223 A1).
4. RYU et al. discloses an illumination device having:
- **a light guide plate**, Figure 4, reference number 2;
 - **the light guide plate having a light incident surface**, as seen in Figure 4;
 - **the light incident surface being for receiving light**, inherent;
 - **the light guide plate having first and second light emission surfaces**, as seen in Figure 2;
 - **the light emission surfaces being for emitting light**, inherent;
 - **the first emission surface including a plurality of protrusions**, Figure 6, reference number 21; and
 - **the protrusions having a geometrically regular pattern**, as seen in Figure 6.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 58-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over RYU et al. (U.S. Pat. Pub. No. 2002/0181223 A1).

6. RYU et al. discloses an illumination device having:

- **a light source**, Figure 4, reference number 19;
- **a light guide plate (as recited in Claim 58)**, Figure 4, reference number 2;
- **the light guide plate having a light incident surface for receiving light from the light source (as recited in Claim 58)**, as seen in Figure 4;
- **a first light emission surface (as recited in Claim 58)**, as seen in figures 6a-7b;
- **a second light emission surface (as recited in Claim 58)**, as seen in figures 6a-7b;
- **the emission surfaces being for emitting light at a first light emission angle with respect to the emission surfaces (as recited in Claim 58)**, inherent, as light will always exit the surface at some angle;
- **a light reflection pattern formed on the first light emission surface (as recited in Claim 58)**, Figure 4, reference number 21;
- **the reflection pattern being for reflecting light toward the second light emission surface (as recited in Claim 58)**, inherent,

as part of the light hitting the pattern will always be reflected towards the opposite surface;

- **the light reflection pattern including a plurality of dots (as recited in Claim 58), Figure 4, reference number 21;**
- **each of the dots having a prism pattern on a corresponding dot (as recited in Claim 58), Figure 6a, reference number 212;**
- **the reflection pattern having different densities of the dots at different areas on the first emission surface (as recited in Claim 59), as seen in Figure 4;**
- **the different densities being such that the closer an area is to the light incident surface, the lower the density of the dots at the area is (as recited in Claim 59), as seen in Figure 4;**
- **the dots have different sizes (as recited in Claim 60), as seen in Figure 4;**
- **the sizes being such that the more distant a dot is from the light incident surface, the larger is the dot (as recited in Claim 60), as seen in Figure 4; and**
- **the dots being formed integrally on the first light emission surface (as recited in Claim 62), paragraph 33, lines 1-4.**

7. RYU et al. discloses all the limitations of the claims, except the prism pattern being elongated in a specific direction (as recited in Claim 58), or the protrusion having

substantially identical size with the number of protrusions per unit area decreasing as the distance to the incident surface increases (as recited in Claim 70).

8. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a prism pattern elongated in a specific direction (as recited in Claim 58) to adjust the quantity of light and/or scattering angle to achieve a desired luminance level and luminance uniformity necessitated by the specific requirements of a particular application, as suggested by RYU et al. in paragraphs 43 and 44.

9. Regarding the number of protrusions per unit area, it would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the number of protrusions per unit area based on the distance from the light incident surface (as recited in claims 67-72), since the Examiner Takes Official Notice of such arrangements being old and well known in the art. One would have being motivated to increase the brightness and uniformity of the emitted light, as per the teachings of RYU (see paragraphs 43 and 44).

10. Claims 67-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over RYU (U.S. Pat. Pub. No. 2002/0181223 A1).

11. RYU et al. discloses an illumination device having:

- **a light guide plate**, Figure 4, reference number 2;

- **the light guide plate having a light incident surface, as seen in Figure 4;**
- **the light incident surface being for receiving light, inherent;**
- **the light guide plate having first and second light emission surfaces, as seen in Figure 2;**
- **the light emission surfaces being for emitting light, inherent;**
- **the first emission surface including a plurality of protrusions, Figure 6a, reference number 21;**
- **the protrusions having a geometrically regular pattern, as seen in Figure 6a;**
- **the geometrically regular pattern being a plurality of fine structures (as recited in claims 71 and 72), as seen in Figure 6a;**
- **the fine structure being linked together (as recited in Claim 72), as seen in Figure 6a.**

12. RYU et al. discloses all the limitations of the claims, except:

- each protrusion being different according to the distance from a light source (as recited in Claim 67);
- the density of the protrusion being lower as the protrusion get closer to the incident surface (as recited in Claim 68);
- the protrusion having different sizes (as recited in Claim 69);
- the size of the protrusions being larger as the distance from the incident surface increases (as recited in Claim 69);

- the protrusion having substantially identical size (as recited in Claim 70);
- the number of protrusions per unit area decreasing as the distance to the incident surface increases (as recited in Claim 70); and
- each of the fine structures having a different height (as recited in Claim 71).

13. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adjust the size, density, and distribution of the protrusion based on their distance from the light incident surface (as recited in claims 67-72), since the Examiner Takes Official Notice of such arrangements being old and well known in the art. One would have being motivated to increase the brightness and uniformity of the emitted light, as per the teachings of RYU (see paragraphs 43 and 44).

Allowable Subject Matter

14. Claims 1, 4-6, 9-21 are allowed.

15. Claims 64-66 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter:

Applicant teaches a light guide plate having a first and second light emission surfaces, and a light reflecting pattern formed on the first emission surface. The pattern includes a plurality of dots for reflecting light from the first surface toward the second surface, such reflected light exiting the second surface at a greater angle than light emitted by the first surface. Each dot having light reflecting surfaces elongated in a selected direction, with adjacent light reflecting surfaces meeting each other at the elongated edges to form an angle between the adjacent reflecting surfaces. In a second embodiment, the light reflecting pattern includes a plurality of microgrooves formed in a geometrically regular pattern.

No prior art was found teaching individually, or suggesting in combination, all of the features of the applicants' invention, specifically the dots having elongated light reflecting surfaces, with adjacent light reflecting surfaces meeting each other at the elongated edges to form an angle between the adjacent reflecting surfaces, or the light reflecting pattern including a geometrically regular pattern formed by a plurality of microgrooves.

Relevant Prior Art

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ohe (U.S. Pat. 4,729,068), **Blanchet** (U.S. Pat. 4,811,507), **Yokoyama** (U.S. Pat. 5,134,549), **Ashall** (U.S. Pat. 5,390,436) and **Suga et al.** (U.S. Pat. 6,425,673) disclose light guide plates including a light incident surface, first and second emission surfaces and a plurality of protrusions formed on one of the emission surfaces. The protrusions being formed with a varying density by adjusting the size, separation, number or height of such protrusion base on the distance from the light incident surface, to increase the brightness and uniformity of the light output.

Response to Arguments

18. Applicant's arguments filed January 10, 2006 have been considered but are moot in view of the new grounds of rejection presented in sections 3-13, above.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negrón whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached on (571) 272-2378. The facsimile machine number for the Art Group is (571) 273-8300.

20. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to <http://pair-direct.uspto.gov>. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.

Sharon Payne
Patent Examiner


Ismael Negron
Examiner
AU 2875